

Union Calendar No. 281

111TH CONGRESS
2^D SESSION

H. R. 5026

[Report No. 111–493]

To amend the Federal Power Act to protect the bulk-power system and electric infrastructure critical to the defense of the United States from cybersecurity and other threats and vulnerabilities.

IN THE HOUSE OF REPRESENTATIVES

APRIL 14, 2010

Mr. MARKEY of Massachusetts (for himself and Mr. UPTON) introduced the following bill; which was referred to the Committee on Energy and Commerce

MAY 25, 2010

Reported with amendments, committed to the Committee of the Whole House on the State of the Union, and ordered to be printed

[Strike out all after the enacting clause and insert the part printed in *italic*]

[For text of introduced bill, see copy of bill as introduced on April 14, 2010]

A BILL

To amend the Federal Power Act to protect the bulk-power system and electric infrastructure critical to the defense of the United States from cybersecurity and other threats and vulnerabilities.

1 *Be it enacted by the Senate and House of Representa-*
 2 *tives of the United States of America in Congress assembled,*

3 **SECTION 1. SHORT TITLE.**

4 *This Act may be cited as the “Grid Reliability and*
 5 *Infrastructure Defense Act” or the “GRID Act”.*

6 **SEC. 2. AMENDMENT TO THE FEDERAL POWER ACT.**

7 *(a) CRITICAL ELECTRIC INFRASTRUCTURE SECU-*
 8 *RITY.—Part II of the Federal Power Act (16 U.S.C. 824*
 9 *et seq.) is amended by adding after section 215 the following*
 10 *new section:*

11 **“SEC. 215A. CRITICAL ELECTRIC INFRASTRUCTURE SECU-**
 12 **RITY.**

13 *“(a) DEFINITIONS.—For purposes of this section:*

14 *“(1) BULK-POWER SYSTEM; ELECTRIC RELI-*
 15 *ABILITY ORGANIZATION; REGIONAL ENTITY.—The*
 16 *terms ‘bulk-power system’, ‘Electric Reliability Orga-*
 17 *nization’, and ‘regional entity’ have the meanings*
 18 *given such terms in paragraphs (1), (2), and (7) of*
 19 *section 215(a), respectively.*

20 *“(2) DEFENSE CRITICAL ELECTRIC INFRASTRUC-*
 21 *TURE.—The term ‘defense critical electric infrastruc-*
 22 *ture’ means any infrastructure located in the United*
 23 *States (including the territories) used for the genera-*
 24 *tion, transmission, or distribution of electric energy*
 25 *that—*

1 “(A) is not part of the bulk-power system;
2 and

3 “(B) serves a facility designated by the
4 President pursuant to subsection (d)(1), but is
5 not owned or operated by the owner or operator
6 of such facility.

7 “(3) *DEFENSE CRITICAL ELECTRIC INFRASTRUC-*
8 *TURE VULNERABILITY.*—The term ‘defense critical
9 electric infrastructure vulnerability’ means a weak-
10 ness in defense critical electric infrastructure that, in
11 the event of a malicious act using electronic commu-
12 nication or an electromagnetic pulse, would pose a
13 substantial risk of disruption of those electronic de-
14 vices or communications networks, including hard-
15 ware, software, and data, that are essential to the re-
16 liability of defense critical electric infrastructure.

17 “(4) *ELECTROMAGNETIC PULSE.*—The term ‘elec-
18 tromagnetic pulse’ means 1 or more pulses of electro-
19 magnetic energy emitted by a device capable of dis-
20 abling, disrupting, or destroying electronic equipment
21 by means of such a pulse.

22 “(5) *GEOMAGNETIC STORM.*—The term ‘geo-
23 magnetic storm’ means a temporary disturbance of
24 the Earth’s magnetic field resulting from solar activ-
25 ity.

1 “(6) *GRID SECURITY THREAT.*—The term ‘grid
2 *security threat*’ means a substantial likelihood of—

3 “(A)(i) a malicious act using electronic
4 communication or an electromagnetic pulse, or a
5 geomagnetic storm event, that could disrupt the
6 operation of those electronic devices or commu-
7 nications networks, including hardware, soft-
8 ware, and data, that are essential to the reli-
9 ability of the bulk-power system or of defense
10 critical electric infrastructure; and

11 “(ii) disruption of the operation of such de-
12 vices or networks, with significant adverse effects
13 on the reliability of the bulk-power system or of
14 defense critical electric infrastructure, as a result
15 of such act or event; or

16 “(B)(i) a direct physical attack on the bulk-
17 power system or on defense critical electric infra-
18 structure; and

19 “(ii) significant adverse effects on the reli-
20 ability of the bulk-power system or of defense
21 critical electric infrastructure as a result of such
22 physical attack.

23 “(7) *GRID SECURITY VULNERABILITY.*—The term
24 ‘grid security vulnerability’ means a weakness that,
25 in the event of a malicious act using electronic com-

1 *munication or an electromagnetic pulse, would pose a*
2 *substantial risk of disruption to the operation of those*
3 *electronic devices or communications networks, in-*
4 *cluding hardware, software, and data, that are essen-*
5 *tial to the reliability of the bulk-power system.*

6 “(8) *LARGE TRANSFORMER.*—*The term ‘large*
7 *transformer’ means an electric transformer that is*
8 *part of the bulk-power system.*

9 “(9) *PROTECTED INFORMATION.*—*The term ‘pro-*
10 *ected information’ means information, other than*
11 *classified national security information, designated as*
12 *protected information by the Commission under sub-*
13 *section (e)(2)—*

14 “(A) *that was developed or submitted in*
15 *connection with the implementation of this sec-*
16 *tion;*

17 “(B) *that specifically discusses grid security*
18 *threats, grid security vulnerabilities, defense crit-*
19 *ical electric infrastructure vulnerabilities, or*
20 *plans, procedures, or measures to address such*
21 *threats or vulnerabilities; and*

22 “(C) *the unauthorized disclosure of which*
23 *could be used in a malicious manner to impair*
24 *the reliability of the bulk-power system or of de-*
25 *fense critical electric infrastructure.*

1 “(10) *SECRETARY*.—The term ‘Secretary’ means
2 the Secretary of Energy.

3 “(11) *SECURITY*.—The definition of ‘security’ in
4 section 3(16) shall not apply to the provisions in this
5 section.

6 “(b) *EMERGENCY RESPONSE MEASURES*.—

7 “(1) *AUTHORITY TO ADDRESS GRID SECURITY*
8 *THREATS*.—Whenever the President issues and pro-
9 vides to the Commission (either directly or through
10 the Secretary) a written directive or determination
11 identifying an imminent grid security threat, the
12 Commission may, with or without notice, hearing, or
13 report, issue such orders for emergency measures as
14 are necessary in its judgment to protect the reliability
15 of the bulk-power system or of defense critical electric
16 infrastructure against such threat. As soon as prac-
17 ticable but not later than 180 days after the date of
18 enactment of this section, the Commission shall, after
19 notice and opportunity for comment, establish rules of
20 procedure that ensure that such authority can be exer-
21 cised expeditiously.

22 “(2) *NOTIFICATION OF CONGRESS*.—Whenever
23 the President issues and provides to the Commission
24 (either directly or through the Secretary) a written
25 directive or determination under paragraph (1), the

1 *President (or the Secretary, as the case may be) shall*
2 *promptly notify congressional committees of relevant*
3 *jurisdiction, including the Committee on Energy and*
4 *Commerce of the House of Representatives and the*
5 *Committee on Energy and Natural Resources of the*
6 *Senate, of the contents of, and justification for, such*
7 *directive or determination.*

8 “(3) *CONSULTATION.*—*Before issuing an order*
9 *for emergency measures under paragraph (1), the*
10 *Commission shall, to the extent practicable in light of*
11 *the nature of the grid security threat and the urgency*
12 *of the need for such emergency measures, consult with*
13 *appropriate governmental authorities in Canada and*
14 *Mexico, entities described in paragraph (4), the Sec-*
15 *retary, and other appropriate Federal agencies re-*
16 *garding implementation of such emergency measures.*

17 “(4) *APPLICATION.*—*An order for emergency*
18 *measures under this subsection may apply to—*

19 “(A) *the Electric Reliability Organization;*

20 “(B) *a regional entity; or*

21 “(C) *any owner, user, or operator of the*
22 *bulk-power system or of defense critical electric*
23 *infrastructure within the United States.*

24 “(5) *DISCONTINUANCE.*—*The Commission shall*
25 *issue an order discontinuing any emergency measures*

1 *ordered under this subsection, effective not later than*
2 *30 days after the earliest of the following:*

3 “(A) *The date upon which the President*
4 *issues and provides to the Commission (either di-*
5 *rectly or through the Secretary) a written direc-*
6 *tive or determination that the grid security*
7 *threat identified under paragraph (1) no longer*
8 *exists.*

9 “(B) *The date upon which the Commission*
10 *issues a written determination that the emer-*
11 *gency measures are no longer needed to address*
12 *the grid security threat identified under para-*
13 *graph (1), including by means of Commission*
14 *approval of a reliability standard under section*
15 *215 that the Commission determines adequately*
16 *addresses such threat.*

17 “(C) *The date that is 1 year after the*
18 *issuance of an order under paragraph (1).*

19 “(6) *COST RECOVERY.—If the Commission deter-*
20 *mines that owners, operators, or users of the bulk-*
21 *power system or of defense critical electric infrastruc-*
22 *ture have incurred substantial costs to comply with*
23 *an order under this subsection and that such costs*
24 *were prudently incurred and cannot reasonably be re-*
25 *covered through regulated rates or market prices for*

1 *the electric energy or services sold by such owners, op-*
2 *erators, or users, the Commission shall, after notice*
3 *and an opportunity for comment, establish a mecha-*
4 *nism that permits such owners, operators, or users to*
5 *recover such costs.*

6 “(c) *MEASURES TO ADDRESS GRID SECURITY*
7 *VULNERABILITIES.—*

8 “(1) *COMMISSION AUTHORITY.—If the Commis-*
9 *sion, in consultation with appropriate Federal agen-*
10 *cies, identifies a grid security vulnerability that the*
11 *Commission determines has not adequately been ad-*
12 *dressed through a reliability standard developed and*
13 *approved under section 215, the Commission shall,*
14 *after notice and opportunity for comment and after*
15 *consultation with the Secretary, other appropriate*
16 *Federal agencies, and appropriate governmental au-*
17 *thorities in Canada and Mexico, promulgate a rule or*
18 *issue an order requiring implementation, by any*
19 *owner, operator, or user of the bulk-power system in*
20 *the United States, of measures to protect the bulk-*
21 *power system against such vulnerability. Before pro-*
22 *mulgating a rule or issuing an order under this para-*
23 *graph, the Commission shall, to the extent practicable*
24 *in light of the urgency of the need for action to ad-*
25 *dress the grid security vulnerability, request and con-*

1 *sider recommendations from the Electric Reliability*
2 *Organization regarding such rule or order. The Com-*
3 *mission may establish an appropriate deadline for the*
4 *submission of such recommendations.*

5 “(2) CERTAIN EXISTING CYBERSECURITY
6 VULNERABILITIES.—Not later than 180 days after the
7 date of enactment of this section, the Commission
8 shall, after notice and opportunity for comment and
9 after consultation with the Secretary, other appro-
10 priate Federal agencies, and appropriate govern-
11 mental authorities in Canada and Mexico, promul-
12 gate a rule or issue an order requiring the implemen-
13 tation, by any owner, user, or operator of the bulk-
14 power system in the United States, of such measures
15 as are necessary to protect the bulk-power system
16 against the vulnerabilities identified in the June 21,
17 2007, communication to certain ‘Electricity Sector
18 Owners and Operators’ from the North American
19 Electric Reliability Corporation, acting in its capac-
20 ity as the Electricity Sector Information and Anal-
21 ysis Center.

22 “(3) RESCISSION.—The Commission shall ap-
23 prove a reliability standard developed under section
24 215 that addresses a grid security vulnerability that
25 is the subject of a rule or order under paragraph (1)

1 or (2), unless the Commission determines that such
2 reliability standard does not adequately protect
3 against such vulnerability or otherwise does not sat-
4 isfy the requirements of section 215. Upon such ap-
5 proval, the Commission shall rescind the rule promul-
6 gated or order issued under paragraph (1) or (2) ad-
7 dressing such vulnerability, effective upon the effective
8 date of the newly approved reliability standard.

9 “(4) GEOMAGNETIC STORMS.—Not later than 1
10 year after the date of enactment of this section, the
11 Commission shall, after notice and an opportunity for
12 comment and after consultation with the Secretary
13 and other appropriate Federal agencies, issue an
14 order directing the Electric Reliability Organization
15 to submit to the Commission for approval under sec-
16 tion 215, not later than 1 year after the issuance of
17 such order, reliability standards adequate to protect
18 the bulk-power system from any reasonably foreseeable
19 geomagnetic storm event. The Commission’s order
20 shall specify the nature and magnitude of the reason-
21 ably foreseeable events against which such standards
22 must protect. Such standards shall appropriately bal-
23 ance the risks to the bulk-power system associated
24 with such events, including any regional variation in
25 such risks, and the costs of mitigating such risks.

1 “(5) *LARGE TRANSFORMER AVAILABILITY.*—Not
2 *later than 1 year after the date of enactment of this*
3 *section, the Commission shall, after notice and an op-*
4 *portunity for comment and after consultation with*
5 *the Secretary and other appropriate Federal agencies,*
6 *issue an order directing the Electric Reliability Orga-*
7 *nization to submit to the Commission for approval*
8 *under section 215, not later than 1 year after the*
9 *issuance of such order, reliability standards address-*
10 *ing availability of large transformers. Such standards*
11 *shall require entities that own or operate large trans-*
12 *formers to ensure, individually or jointly, adequate*
13 *availability of large transformers to promptly restore*
14 *the reliable operation of the bulk-power system in the*
15 *event that any such transformer is destroyed or dis-*
16 *abled as a result of a reasonably foreseeable physical*
17 *or other attack or geomagnetic storm event. The Com-*
18 *mission’s order shall specify the nature and mag-*
19 *nitude of the reasonably foreseeable attacks or events*
20 *that shall provide the basis for such standards. Such*
21 *standards shall—*

22 “(A) *provide entities subject to the stand-*
23 *ards with the option of meeting such standards*
24 *individually or jointly; and*

1 “(B) appropriately balance the risks associ-
2 ated with a reasonably foreseeable attack or
3 event, including any regional variation in such
4 risks, and the costs of ensuring adequate avail-
5 ability of spare transformers.

6 “(d) *CRITICAL DEFENSE FACILITIES.*—

7 “(1) *DESIGNATION.*—Not later than 180 days
8 after the date of enactment of this section, the Presi-
9 dent shall designate, in a written directive or deter-
10 mination provided to the Commission, facilities lo-
11 cated in the United States (including the territories)
12 that are—

13 “(A) critical to the defense of the United
14 States; and

15 “(B) vulnerable to a disruption of the sup-
16 ply of electric energy provided to such facility by
17 an external provider.

18 *The number of facilities designated by such directive*
19 *or determination shall not exceed 100. The President*
20 *may periodically revise the list of designated facilities*
21 *through a subsequent written directive or determina-*
22 *tion provided to the Commission, provided that the*
23 *total number of designated facilities at any time shall*
24 *not exceed 100.*

1 “(2) COMMISSION AUTHORITY.—If the Commis-
2 sion identifies a defense critical electric infrastructure
3 vulnerability that the Commission, in consultation
4 with owners and operators of any facility or facilities
5 designated by the President pursuant to paragraph
6 (1), determines has not adequately been addressed
7 through measures undertaken by owners or operators
8 of defense critical electric infrastructure, the Commis-
9 sion shall, after notice and an opportunity for com-
10 ment and after consultation with the Secretary and
11 other appropriate Federal agencies, promulgate a rule
12 or issue an order requiring implementation, by any
13 owner or operator of defense critical electric infra-
14 structure, of measures to protect the defense critical
15 electric infrastructure against such vulnerability. The
16 Commission shall exempt from any such rule or order
17 any specific defense critical electric infrastructure
18 that the Commission determines already has been ade-
19 quately protected against the identified vulnerability.
20 The Commission shall make any such determination
21 in consultation with the owner or operator of the fa-
22 cility designated by the President pursuant to para-
23 graph (1) that relies upon such defense critical elec-
24 tric infrastructure.

1 “(3) *COST RECOVERY.*—An owner or operator of
 2 *defense critical electric infrastructure shall be re-*
 3 *quired to take measures under paragraph (2) only to*
 4 *the extent that the owners or operators of a facility*
 5 *or facilities designated by the President pursuant to*
 6 *paragraph (1) that rely upon such infrastructure*
 7 *agree to bear the full incremental costs of compliance*
 8 *with a rule promulgated or order issued under para-*
 9 *graph (2).*

10 “(e) *PROTECTION OF INFORMATION.*—

11 “(1) *PROHIBITION OF PUBLIC DISCLOSURE OF*
 12 *PROTECTED INFORMATION.*—*Protected information—*

13 “(A) *shall be exempt from disclosure under*
 14 *section 552(b)(3) of title 5, United States Code;*
 15 *and*

16 “(B) *shall not be made available pursuant*
 17 *to any State, local, or tribal law requiring dis-*
 18 *closure of information or records.*

19 “(2) *INFORMATION SHARING.*—

20 “(A) *IN GENERAL.*—*Consistent with the*
 21 *Controlled Unclassified Information framework*
 22 *established by the President, the Commission*
 23 *shall promulgate such regulations and issue such*
 24 *orders as necessary to designate protected infor-*

1 *mation and to prohibit the unauthorized disclo-*
2 *sure of such protected information.*

3 “(B) *SHARING OF PROTECTED INFORMA-*
4 *TION.—The regulations promulgated and orders*
5 *issued pursuant to subparagraph (A) shall pro-*
6 *vide standards for and facilitate the appropriate*
7 *sharing of protected information with, between,*
8 *and by Federal, State, local, and tribal authori-*
9 *ties, the Electric Reliability Organization, re-*
10 *gional entities, and owners, operators, and users*
11 *of the bulk-power system in the United States*
12 *and of defense critical electric infrastructure. In*
13 *promulgating such regulations and issuing such*
14 *orders, the Commission shall take account of the*
15 *role of State commissions in reviewing the pru-*
16 *dence and cost of investments within their re-*
17 *spective jurisdictions. The Commission shall con-*
18 *sult with appropriate Canadian and Mexican*
19 *authorities to develop protocols for the sharing of*
20 *protected information with, between, and by ap-*
21 *propriate Canadian and Mexican authorities*
22 *and owners, operators, and users of the bulk-*
23 *power system outside the United States.*

24 “(3) *SUBMISSION OF INFORMATION TO CON-*
25 *GRESS.—Nothing in this section shall permit or au-*

1 *thorize the withholding of information from Congress,*
2 *any committee or subcommittee thereof, or the Comp-*
3 *troller General.*

4 “(4) *DISCLOSURE OF NON-PROTECTED INFORMA-*
5 *TION.—In implementing this section, the Commission*
6 *shall protect from disclosure only the minimum*
7 *amount of information necessary to protect the reli-*
8 *ability of the bulk-power system and of defense crit-*
9 *ical electric infrastructure. The Commission shall seg-*
10 *regate protected information within documents and*
11 *electronic communications, wherever feasible, to facili-*
12 *tate disclosure of information that is not designated*
13 *as protected information.*

14 “(5) *DURATION OF DESIGNATION.—Information*
15 *may not be designated as protected information for*
16 *longer than 5 years, unless specifically redesignated*
17 *by the Commission.*

18 “(6) *REMOVAL OF DESIGNATION.—The Commis-*
19 *sion may remove the designation of protected infor-*
20 *mation, in whole or in part, from a document or elec-*
21 *tronic communication if the unauthorized disclosure*
22 *of such information could no longer be used to impair*
23 *the reliability of the bulk-power system or of defense*
24 *critical electric infrastructure.*

1 “(7) *JUDICIAL REVIEW OF DESIGNATIONS.*—Not-
2 withstanding subsection (f) of this section or section
3 313, a person or entity may seek judicial review of
4 a determination by the Commission concerning the
5 designation of protected information under this sub-
6 section exclusively in the district court of the United
7 States in the district in which the complainant re-
8 sides, or has his principal place of business, or in the
9 District of Columbia. In such a case the court shall
10 determine the matter *de novo*, and may examine the
11 contents of documents or electronic communications
12 designated as protected information in camera to de-
13 termine whether such documents or any part thereof
14 were improperly designated as protected information.
15 The burden is on the Commission to sustain its des-
16 ignation.

17 “(f) *JUDICIAL REVIEW.*—The Commission shall act ex-
18 peditiously to resolve all applications for rehearing of or-
19 ders issued pursuant to this section that are filed under sec-
20 tion 313(a). Any party seeking judicial review pursuant to
21 section 313 of an order issued under this section may obtain
22 such review only in the United States Court of Appeals for
23 the District of Columbia Circuit.

24 “(g) *PROVISION OF ASSISTANCE TO INDUSTRY IN*
25 *MEETING GRID SECURITY PROTECTION NEEDS.*—

1 “(1) *EXPERTISE AND RESOURCES.*—The Sec-
2 retary shall establish a program, in consultation with
3 other appropriate Federal agencies, to develop tech-
4 nical expertise in the protection of systems for the
5 generation, transmission, and distribution of electric
6 energy against geomagnetic storms or malicious acts
7 using electronic communications or electromagnetic
8 pulse that would pose a substantial risk of disruption
9 to the operation of those electronic devices or commu-
10 nications networks, including hardware, software,
11 and data, that are essential to the reliability of such
12 systems. Such program shall include the identifica-
13 tion and development of appropriate technical and
14 electronic resources, including hardware, software,
15 and system equipment.

16 “(2) *SHARING EXPERTISE.*—As appropriate, the
17 Secretary shall offer to share technical expertise devel-
18 oped under the program under paragraph (1),
19 through consultation and assistance, with owners, op-
20 erators, or users of systems for the generation, trans-
21 mission, or distribution of electric energy located in
22 the United States and with State commissions. In of-
23 fering such support, the Secretary shall assign higher
24 priority to systems serving facilities designated by the
25 President pursuant to subsection (d)(1) and other

1 *critical-infrastructure facilities, which the Secretary*
2 *shall identify in consultation with the Commission*
3 *and other appropriate Federal agencies.*

4 “(3) *SECURITY CLEARANCES AND COMMUNICA-*
5 *TION.—The Secretary shall facilitate and, to the ex-*
6 *tent practicable, expedite the acquisition of adequate*
7 *security clearances by key personnel of any entity*
8 *subject to the requirements of this section to enable*
9 *optimum communication with Federal agencies re-*
10 *garding grid security threats, grid security*
11 *vulnerabilities, and defense critical electric infrastruc-*
12 *ture vulnerabilities. The Secretary, the Commission,*
13 *and other appropriate Federal agencies shall, to the*
14 *extent practicable and consistent with their obliga-*
15 *tions to protect classified and protected information,*
16 *share timely actionable information regarding grid*
17 *security threats, grid security vulnerabilities, and de-*
18 *fense critical electric infrastructure vulnerabilities*
19 *with appropriate key personnel of owners, operators,*
20 *and users of the bulk-power system and of defense*
21 *critical electric infrastructure.”.*

22 (b) *CONFORMING AMENDMENTS.—*

23 (1) *JURISDICTION.—Section 201(b)(2) of the*
24 *Federal Power Act (16 U.S.C. 824(b)(2)) is amended*

1 *by inserting “215A,” after “215,” each place it ap-*
2 *pears.*

3 *(2) PUBLIC UTILITY.—Section 201(e) of the Fed-*
4 *eral Power Act (16 U.S.C. 824(e)) is amended by in-*
5 *serting “215A,” after “215.”*

Amend the title so as to read: “A bill to amend the Federal Power Act to protect the bulk-power system and electric infrastructure critical to the defense of the United States against cybersecurity and other threats and vulnerabilities.”.

Union Calendar No. 281

11TH CONGRESS
2^D Session

H. R. 5026

[Report No. 111-493]

A BILL

To amend the Federal Power Act to protect the bulk-power system and electric infrastructure critical to the defense of the United States from cybersecurity and other threats and vulnerabilities.

MAY 25, 2010

Reported with amendments, committed to the Committee of the Whole House on the State of the Union, and ordered to be printed